Submitted herewith is an IDS listing the prior art set forth in the specification, along with a copy of each of the cited references. The prescribed fee is enclos d.

The Examiner noted that applicant's Figures are not numbered consecutively. It is noted that Figures 2 and 3 reflect the multiple-cell nature of the drawings. Having regard to the Examiner's comments, the description of the Figures has been amended to refer to Figures 2A etc. and 3A etc. It is submitted that the submission of formal drawings can await allowance of the application.

The Examiner indicates that the Oath or Declaration is defective and that a new Declaration in compliance with 37 CFR 1.67(a) identifying the Application by Application Number and filing date is required, with respect thereto, a new Oath or Declaration will follow shortly, thereby obviating this informality.

The Examiner rejected claims 1 to 15 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In this regard, the Examiner raised several issues:

- the Examiner objected to the "HIV-derived" in claims 1 and 6 and suggested that the term "derived" be deleted. The Examiner's suggestion for modification in this regard has been adopted.
- the Examiner objected to the term "HLA class II restricted T-helper epitopes" in claim 2. Claim 2 defines the T-helper molecule of claim 1 which provides T-helper cells of the immune system. It is submitted that the language of the claim is clear in its context.
- The Examiner objected to the term "corresponding to" in claims 6 to 7 and 12. The Examiner suggested deletion of the term "corresponding to". However, these claims define the T-cell inducing HIV molecule of claim 1 as a peptide. The term "corresponding to" defines the amino acid sequence of the peptide and, it is submitted, requires no modification. Claim 7 has, however, b n modified to corr ct the clerical error in this claim.

- the Examiner objected to the term "having" in claim 12 . The term "having" is used for its ordinary English meaning that the peptide has the recited amino acid sequence. The Examiner suggested "comprising" or "consisting of" language. "Comprising" is inappropriate as open ended. Claim 12 has been amended to refer to the peptides "consisting of" the amino acid sequences, i.e , the peptides have the peptide amino acid sequences.

Having regard to the above and the amendments made to the claims, it is submitted that claims 1 to 15 can no longer be considered indefinite and the rejection thereof under 35 USC 112, second paragraph, should be withdrawn.

The Examiner rejected claims 1 to 15 under 35 USC, first paragraph, as containing subject matter which was not disclosed in the specification in such a way as to enable one skilled in the art to which its pertains, or with which it is most nearly connected, to make and/or use the inventions. Reconsideration is requested.

The present invention is based on the findings that (1) two nanomer peptides, designated CLP-177 and CLP-72, a hexamer designated CLP-178 and a 12-mer designated CLP-182 of the HIV-1(LAI) REV protein were individually able to bind and stabilize membrane-bound the HLA class 1 molecule, HLA-A2; and (2) that a long peptide (SEQ ID No: 9), encompassing the amino acid residues 52 to 116 of the HIV-1(LAI) Rev protein, and constructed by having a single cholesterol or palmitoyl moiety attached to its amino-(N-) terminus via a KSS linker to form lipopeptides, CLP-176 and CLP-175 respectively, is also capable of eliciting CTL as well as antibody responses in HLA-A2 transgenic mice.

Having regard to their experimental results, applicants have provided a sound immunization protocol for inducing a HIV-specific cytotoxic T-cell response in a host by initial administration of a T-helper molecule to prime the immune system of the host followed by administration of a mixture of the T-helper molecule and a T-cell epitope-containing peptide corresponding to a portion of an HIV antigen.

The invention is illustrat d by using, as the T-helper molecule, peptides which correspond to a portion of the hepatitis B virus nucleocapsid antigen and, as the HIV T-cell epitope containing peptid , certain lipopeptides derived from the REV protein, as discussed above. Clearly, however, the invention is applicable to other T-helper cells and other HIV T-cell epitopes containing peptides, and this is reflected in the language adapted.

In general, as recited in claim 1, applicants invention is directed to a method of generating HIV-specific cytotoxic T-cell response in a host. The procedure is a two-step operation, involving an initial adminstration of a T-helper molecule to provide T-helper cells of the immune system of the host and subsequently administering to the host a mixture of the T-helper molecule a T-cell inducing HIV molecule to generate an HIV-specific CTL response in the host.

Despite the Examiner comments as to the refractory nature of HIV infection to antiviral therapy, applicants claims are directed to the generation of HIV-specific CTL responses in a host and to specific peptides. Having regard to the above comment, it is submitted that claims 1 to 15 are fully enabled by the disclosure and hence the rejection thereof under 35 USC 112, first paragraph, should be withdrawn.

The Examiner rejected claims 1 to 15 under 35 USC 103 as being unpatentable over Blasevic I, Blasevic II, and Schonbach et al. Reconsideration is requested.

As discussed above, the present invention is concerned with generating an HIV-specific cytotoxic T-cell response in a host and to specific peptides useful in such procedure. The procedure in which an initial primary administration of a T-helper molecule and a subsequent administration of a mixture of the T-helper molecule and a T-cell inducing HIV molecule.

At best, the Blasevic I reference describes helper and cytotoxic T-cell response to synthetic peptides of HIV Rev. These peptides are different peptides from those claimed by applicant. Blasevic II, as the Examiner notes, describes T-cell epitopes of the tat protein. While Schonbach discloses combination of synthetic peptides with palmitoyl to produce lipopeptides, the peptides are directed from the gp46 protein of HTLV. While both HIV and HTLV

are T-cell lypohexapeptide viruses, they are nevertheless quite different organisms.

The disclosures of the prior art, it is submitted, do not suggest applicants specific procedure for stimulating and HIV-specific T-cell response by the two-step administration procedure defined in the claims and the specific peptides used in that procedure. As can be seen from applicants data, priming with a T-helper molecule and binding with a mixture of T-helper molecule and peptides is more effective than immunization with the peptides alone for the inducting of CTL response (see Figure 3).

Accordingly, it is submitted that claims 1 to 15 are suitable over the art and hence the rejection thereof under 35 USC 103 as being unpatentable over Blasevic I, Blasevic II and Schonbach et al, should be withdrawn.

It is believed that this application now is in condition for allowance and early and favorable consideration and allowance are respectfully submitted.

Respectfully submitted,

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